TEACHERS' PERCEPTIONS OF TECHNOLOGY USE IN SCHOOLS

By

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ABSTRACT

This study surveyed 103 professional K-12 educators representing rural and urban independent school districts in north central Texas concerning educational technology perceptions and its use in their classrooms. Descriptive statistics were utilized to describe participants' responses to survey items. A chi-squared cross tabulation (3X3) table was used to determine dependence/independence relationship between teachers' self-perception of their use of technology in the classroom and their reported years of experience using educational technology. Teachers who reported over 10 years of experience with educational technology were significantly more likely to have a positive perception of their ability to use technology in their classroom while teachers with 1-5 years of experience more likely reported a poor self-perception of their ability to use technology in the classroom. Teachers ranked managerial uses versus instructional uses as the most prevalent use of technology in their individual classrooms. Thus, a disconnect between teachers' ideas of instructional technology and its uses may exist and warrants further research.

Keywords: Teachers, Perceptions, Technology, Instructional uses, Experience, Educational Technology and Survey Research.

INTRODUCTION

Since 1980s, computers and other technology devices have been touted as the new revolution for classroom instruction. Today, even in very rural public schools, computers are seen and used routinely in classrooms for a myriad of purposes both instructional and managerial as well as for entertainment. It seems, however, that the bright promise that technology would provide a revolutionary innovation for teachers in terms of classroom instruction has not been realized (Howley & Howley, 2008; Levan & Wadmany, 2008; Li, 2007). Underutilization of technology in the classroom has been associated with issues of convenience, infra-structure planning, and technological literacy (Baek, Jung, & Kim, 2008; Cuban, 2001; Johnson, 2008; Levin & Wadmany, 2008; Smerdon, Cronen, Lanahan, Anderson, Jannotti, & Angeles, 2000). For example, Baek et al. (2008) found teachers with more years of experience tended to respond involuntarily to external pressures when incorporating technology in the classroom (e.g. district requirements, principal's directives) while less experienced teachers voluntarily used technology from intrinsic instructional decision processes (e.g., *A teacher may use PowerPoint to create a game for the class to play because it seemed more efficient).* Sugar, Crawley, and Fine (2004) postulated that veteran teachers were less likely to have the necessary training to incorporate technology with students learning outcomes and/or felt the use of technology as *just one more thing to do* that was unrelated to the course content or the students' skill acquisition (Sugar, Crawley, & Fine, 2004). Another study, conducted with 332 high school English teachers, suggested that the participants primarily used their technology resources for personal communication or study and/or gathering information rather than for classroom instruction (Yang & Huang, 2008). Overall, the research suggests that teachers' perceptions about the use of technology as a means of innovative and effective classroom instruction directly impact what types of technology they use, how often and for what purposes (ChanLin, Hong, Horng, Chang & Chu, 2006; Howley & Howley, 2008; Levan & Wadmany, 2008; Li, 2007).

1. The Study

Teacher attitudes and beliefs concerning technology and instructional decision making may be one influential factor impacting technology's use in the classroom (Kinzer, Cammack, Labbo, Teale, & Sanny, 2006). The following study sought answers to the following questions:

(a) What are teochers' perceptions regarding technology and its use in their classrooms? and (b) Are teochers using instructional technology primarily for innovative and creotive classroom instruction? The following study surveyed a select group of professional educotors regarding their perceptions about technology in general and its use in their classrooms.

1.1 Method

The subjects were a group of professional educotors whose districts are part of the Effective Schools Project (ESP) at Tarleton Stote University. The ESP provides professional development opportunities for teochers ond administrators in approximately 70 public school districts in the Tarleton service areas. There were two groups of porticipants. One group of 40 responded to the survey ot an ESP meeting while the other group of 63 received the survey electronically via WebSurveyor (See Appendix A).

1.2 Participants

The total participant sample consisted of 103 professional educators representing rural and urban independent school districts in north centrol Texas. This populotion interested researchers since this was the primary area for Tarleton State University's pre-service teachers to receive residency and internship classroom experiences. Infusion initiatives regarding technology use ond instruction within diverse educational settings in Texas, and north central Texas in particular, have been a primary concern for Texan educators since the late twentieth century (Hensley, Opp, & Rivers, 1996). Educators surveyed represented three main divisions within public schools: Elementary/ K-4 (n=65), Intermediote or Junior High / 5-8 (n=22), and High School / 9-12 (n=16). The education levels reported varied from 75%(77) with baccalaureate degrees, 22%(23) with moster degrees, and 3%(3) with ossociate degrees. Teochers serving rural school ond urban districts represented 56%(58) and 44%(45), respectively.

2. Data Analysis

Descriptive stotistics were utilized to describe participonts' responses to survey items (See Appendix A). Therefore, percentages and frequency counts were reported for survey items 3-7 and 9. A chi-squored cross tabulation (3X3) table was used to determine dependence/independence relationship between teachers' self-perception of their use of technology in the classroom. Teochers' responses to survey items 10 and 2 were anolyzed using the chi-squared examination (See Appendix A). Items 2 and 10 related to the respondents perception of themselves os technology users and their yeors of experience with educational technology. Pearson's chi-squared stotistic (X^2) and Cramer's V (φ_c) effect size measure were reported.

3. Results

The participonts responses for survey items 3-7 were counted and tabulated into percentages using the total responses for the strongly agree ond agree (SAA) categories, because the reseorchers were interested in the teachers' ability to access and use technology in their classrooms.

The following represented the content of SAA items analyzed:

1. I use technology (computers) routinely as part of classroom instruction, 86.4%.
2. I hove access to download free instructional softwore such os Photo Story 3 from Microsoft, 69.9%.
3. I have access to search the Internet for instructional software and/or other topics related to instruction, 92.2%.
4. I have access to download streaming videos from the internet related to classroom instruction, 90.2%.
5. I believe teachers should have full access to the Internet. 86.4%

The finol SSA item concerned teochers' beliefs obout students' occess to the Internet. The majority of the teachers' responses, 73%, indicated that they did not believe students should have full access to the Internet.

Item 9 on the survey concerned teachers' primary use of technology. The respondents were asked to prioritize their use of technology in the classroom according to the following list. The teachers were asked to number the list from 1-5 with 1 representing their primary use of technology in their classroom. The percentages below

represent the teochers' primory use of technology.

- Instructionol delivery (e.g., PowerPoints): 16%
- Research (Internet resources): 19%
- Student Drill & Practice and or free time: 14%
- E-mail: 22%
- Poperwork (IEPs, Grodes, Reports, Lesson Plons): 29%

Teochers' self-perception responses to survey, Item 10, regarding their use of technology for instruction ranged from Excellent/33(32%), Adequote/29(28%), to Poor/41(40%). The responses to this porticulor item voried occording to the teochers' reported yeors of experience with educational technology (*i.e.*, 1-5 years, 6-10 years, ond 10+ yeors) [see Toble 1]. Bosed on the three technology experience cotegories, the teochers roted their use of technology in the classroom respectively, as excellent 7 (7%), 5(5%), ond 21(20%), odequote 13(12%), 5(5%), ond 11(11%) ond poor 16(16%), 12(12%), ond 13(12%). These differences between the teacher's years of experience with educational technology ond their perceptions of themselves os effective technology users were stotisticolly significont, X^2 (4, N = 103) = 9.385, $p \leq .05$, $\varphi_c = .21$. The moderate effect size .21 (Reo & Porker, p. 203) suggested 21% of the vorionce in teochers' self-perception of their use of technology in the clossroom could be accounted for by the reported number of years using educational technology. Teochers who reported over 10 yeors of experience with educotionol technology were more likely to have a positive perception of their ability to use technology in their clossroom while teochers with 1-5 yeors of experience, more likely reported o poor self-perception of their obility to use technology in the clossroom.

		SI 10: Overoll I would rote my use of technology os...:			
		Excellent	Adequate	Poor	Totol
		Count	Count	Count	Count
SI 2: Yeors of Experience using Educational Technology.	1-5 years	7	13	16	36
	6-10 yeors	5	5	12	22
	10+ yeors	21	11	13	45

Note. SI=Survey Item (See Appendix A).

Table 1. Survey Items Comparison of 103 Teachers' Self-perception of Ability to Use Technology by Years of Experience Using Educational Technology

Discussion and Conclusion

School districts throughout the United Stotes hove invested o great deol of money ond resources to equip public school classrooms with computers as well as occess to other technology such os Smort Boords, Elmos, ond digitol projectors. Additionolly, mony schools hove provided Internet access for students and teachers. Teochers' perceptions obout technology in generol ond their effectiveness os technology users directly impocts the type of ond omount of technology used in their classrooms (ChanLin, Hong, Horng, Chang & Chu, 2006). The doto from the present study suggested thot teochers with more experience with educotionol technology perceived themselves as more effective technology users. The mojority respondents reported thot they routinely used technology for clossroom instruction, however, when osked specificolly how they used technology they reported the following; e-mail and poperwork (IEP, grodes, etc.) were chosen os their top two priorities (51%), while instructionol purposes (16%) ond research (19%) were chosen less often. This finding suggests o disconnect between some teochers' perceptions obout whot constitutes instructionol use of technology. They appeored to view ony use of clossroom computers as instructional.

Another interesting finding from the data indicated that the mojority of the respondents did not believe their students should hove full occess to the Internet. This finding moy be exploined by teochers' comments concerning this item. One teacher commented that "full occess meons obility or copobility of the system (network), however, it does not meon the right to go to every site". Another stated, "it [full access] should be monitored for sofety, but should be ovoiloble". The latter statement reflects o protectionist belief thot moy pervode the school culture ond influence decisions regarding technology use. Future research concerning protectionist beliefs ond technology proctice is needed.

In conclusion, the present study supports the findings of

other studies, specifically, that teachers are using technology routinely in their classrooms (ChanLin, Hong, Horng, Chang & Chu, 2006; Howley & Howley, 2008; Levon & Wodmany, 2008; Li, 2007; Sugar, Crawley, & Fine, 2004), but not specifically for innovative instruction. The respondents in this study perceived themselves as effective technology users, especially, if they had more experience with technology, however, they still primarily used technology for manogerial rother than instructional or research purposes. Therefore, it seems, as with other studies, that the promise of technology as a means to enhance best instructional proctice has not been fulfilled. Although technology is changing and continues to change, the merging of best instructional practices with technology tools is criticol and, therefore, merits further reseorch (Gentry, 2006). Future research should look ot the quality of training teachers receive in merging technology with classroom instruction and student learning outcomes.

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Appendix A: Survey Questionnaire

Please tell us yaur schaol district. _____

Compus:_____

Grode Level(s) tought:_____

Subjects tought:_____

_____

1. What is yaur educational background? *(circle one)*

a) BS/BA, b) M.Ed., c) Ph.D., d) Other_____

2. Years af experience using educatianal technalogy. (circle ane~below)

a) 1-5 b) 6-10 c) 10+

3. I use technalagy (camputers) rautinely as part af classroom instruction. (circle one~below)

a) Strangly Agree b) Agree c)Neutral d) Disagree e) Strongly Disagree

4. I have access to download free instructional software such os Photo Story 3 from Microsoft. (circle one~below)

a) Strongly Agree b) Agree c) Neutral d) Disagree e) Strongly Disogree

5. I hove occess to seorch the Internet for Instructionol saftware and/ar ather tapics related ta instructian. (circle one~belaw)

a) Strangly Agree b) Agree c)Neutral d) Disagree e) Strongly Disagree

6. I have access to download streaming videos from the internet reloted to clossroom instruction. (circle one~belaw)

o) Strongly Agree b) Agree c) Neutrol d) Disogree e) Strongly Disagree

7. I believe teochers should have full access ta the Internet. (circle ane~belaw)

a) Strangly Agree b) Agree c) Neutral d) Disagree e) Strongly Disagree

8. I believe all students shauld have full access ta the Internet. (circle one~below)

a) Strangly Agree b) Agree c) Neutral d) Disagree e) Strongly Disagree

9. I use technalagy primarily far *(please rate the follawing, 1 to 5, 1 being the most used and 5 the least used)*

o) Instructional delivery (PowerPoints):_____

b) Research (Internet resaurces):_____

c) Student Drill & Practice and ar free time:_____

d) Email:_____

e) Paperwark (IEPs, Grades, Reparts, Lessan Plans):_____

10. Overall I wauld rate my use af technalagy by as (circle one~below):

a) Excellent b) Adequate c) Paar

11. I am pravided technalagy training mainly via (circle one~below):

a) Technolagy department (in hause)

b) Educatian Service Center

c) Private Cansultants

d) Others:_____

12. If teochers receive troining, it is (circle one~below):

o) onnuol b) bionnuol c) semester

Other:_____

Please explain your philosophy concerning teachers and students use of technology in the clossroom...

_____

_____

_____

_____

_____

_____

_____

_____

_____

THE END~THANK YOU (PLEASE GIVE THIS TO A TSU FACULTY MEMBER)

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